

ABSTRACT

Adinda Lailatur Rohmah. 24020122140177. **Effect of Boiling Duration on Phytochemical Content and Antioxidant Activity of Bajakah Stem Extract (*Spatholobus littoralis* Hassk).** Under the guidance of Yulita Nurchayati and Muhammad Luqman Hakim.

Bajakah (*Spatholobus littoralis* Hassk) is a climbing plant belonging to the Fabaceae family and grows in the peat forests of Kalimantan. Bajakah stems contain various phytochemical compounds with potential as natural antioxidants. The boiling method is often used as a simple extraction technique however the duration and temperature of boiling have not been standardized. This study aimed to determine the effect of boiling duration on the presence of alkaloid and phenolic compounds, total flavonoid content, and antioxidant activity in bajakah stem extract. The research methods included sample collection from the natural habitat, sample selection, and extraction using a boiling method at 90°C with varying durations of 0, 5, 10, 15, 20, and 25 minutes. Qualitative analysis of alkaloid compounds was carried out using Dragendorff and Mayer reagents, while phenolic compounds were analyzed using 1% FeCl₃. Total flavonoid content was determined using the UV-Vis spectrophotometric method, and antioxidant activity (IC₅₀) was analyzed using the DPPH method. The results showed that all boiling treatments produced alkaloid compounds indicated by the formation of precipitates in the Dragendorff and Mayer reagents, as well as phenolic compounds indicated by the formation of a dark brown color and precipitate in 1% FeCl₃. The highest total flavonoid content was obtained at 15 minutes of boiling, reaching 14.12 mg QE/g. The best IC₅₀ value was also obtained at the 15-minute treatment, which was 23.33 ppm and categorized as very strong antioxidant activity. Variations in boiling duration influence the phytochemical content of bajakah stem extract, which has potential as a natural antioxidant source. The phytochemical content of bajakah stem has the potential to be utilized by the community or applied in pharmaceutical testing.

Keywords: antioxidant activity, bajakah stem, boiling duration, phytochemicals.